

Program

Day 1: November 14 (Tue)

9:00-10:00	JSNAC General Meeting		
10:00-10:10	Opening Remarks		
10:10-10:40	Memorial Lecture for the Late Prof. Morio Ikehara Eiko Ohtsuka, Shigenori Iwai		
10:40-11:05	Break		
11:05-11:45	Invited Lecture Chair: Shigenori Iwai Osaka Univ.	IL-01	Peptide-PMO conjugates for the treatment of neuromuscular diseases <u>Michael Gait</u> MRC Laboratory of Molecular Biology
11:45-12:00	Oral Presentations Chair: Shigeori Takenaka Kyushu Inst. of Tech.	10-01	Thiol Modified Naphthyridine Carbamate Dimer Accumulated on CGG Repeat DNA <u>Takeshi Yamada</u> , Shouta Miki, Kazuhiko Nakatani Department of Regulatory Bioorganic Chemistry, The Institute of Scientific and Industrial Research (ISIR), Osaka University
12:00-12:15		10-02	RNA Interference by Intracellular Buildup of siRNA <u>Yasuaki Kimura</u> ¹⁾ , Hideto Maruyama ²⁾ , Ryota Oikawa ¹⁾ , Genichiro Tsuji ¹⁾ , Shizuya Yoshinaga ¹⁾ , Naoko Abe ¹⁾ , Satoshi Shuto ²⁾ , Akira Matsuda ²⁾ , Yoshihiro Ito ³⁾ , Hiroshi Abe ¹⁾ 1) Graduate School of Science, Nagoya University, 2) Graduate School of Pharmaceutical Sciences, Hokkaido University, 3) RIKEN Center for Emergent Matter Science
12:15-12:30		10-03	Selective alkylation of T-T mismatched bases in DNA <u>Kazumitsu Onizuka</u> ¹⁾ , Akira Usami ¹⁾ , Yudai Yamaoki ²⁾³⁾ , Tomohito Kobayashi ¹⁾ , Madoka E. Hazemi ¹⁾ , Tomoko Chikuni ¹⁾ , Masato Katahira ²⁾³⁾ , Fumi Nagatsugi ¹⁾ 1) Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, 2) Institute of Advanced Energy, Kyoto University, 3) Graduate School of Energy Science, Kyoto University
12:30-12:45		10-04	Specific Detection of 8-oxo-dGTP in Aqueous Media using Cyclen-Metal Complexes <u>Yasufumi Fuchi</u> , Takashi Fukuda, Shigeki Sasaki Graduate School of Pharmaceutical Sciences, Kyushu University
12:45-13:35	Lunch Break		
13:35-15:05	Poster Presentations (Odd Numbers)		
15:05-15:20	Oral Presentations Chair: Hirohide Saito Kyoto Univ.	10-05	Construction of Topologically Interlocked DNAs Inside a DNA Scaffold <u>Arivazhagan Rajendran</u> ¹⁾ , Seo-jeong Park ²⁾ , Eiji Nakata ¹⁾ , Youngjoo Kwon ²⁾ , Takashi Morii ¹⁾ 1) Institute of Advanced Energy, Kyoto University, 2) College of Pharmacy, Ewha Womans University
15:20-15:35		10-06	Novel DNA aptamer assemblies that control growth factor signaling and cellular functions <u>Ryosuke Ueki</u> ¹⁾ , Saki Atsuta ¹⁾ , Ayaka Utsumi ¹⁾ , Yohei Hayashi ²⁾ , Shinsuke Sando ¹⁾ 1) Department of Chemistry and Biotechnology, Graduate School of Engineering, The University of Tokyo, 2) Laboratory of Gene Regulation, Faculty of Medicine, University of Tsukuba

15:35-15:50	Oral Presentations Chair: Akihiro Ohkubo Tokyo Inst. of Tech.	1O-08 Development of Photoresponsive DNA Nanostructure Integrated Nucleic Acid Medicine <u>Seigi Yamamoto</u> , Noriko Saito-Tarashima, Noriaki Minakawa Graduate School of Pharmaceutical Science, Tokushima University
15:50-16:05		1O-09 Observation of biophysical property of G-quadruplex in a confined nanospace <u>Masayuki Endo</u> ¹⁾²⁾ , Prakash Shrestha ³⁾ , Sagun Jonchhe ³⁾ , Tomoko Emura ²⁾ , Kumi Hidaka ²⁾ , Hiroshi Sugiyama ¹⁾²⁾ , Hanbin Mao ³⁾ 1) Institute for Integrated Cell-Material Sciences, Kyoto University, 2) Department of Chemistry, Kyoto University, 3) Department of Chemistry and Biochemistry, Kent State University
16:05-16:30	Break	
16:30-17:10	Invited Lecture Chair: Hiroyuki Asanuma Nagoya Univ.	IL-02 PyrrolidinyI peptide nucleic acid: A conformationally constrained PNA with unusual hybridization properties <u>Tirayut Vilaivan</u> Department of Chemistry, Faculty of Science, Chulalongkorn University
17:10-17:25	Oral Presentations Chair: Kazushige Yamana Univ. of Hyogo	1O-10 Chimeric RNA oligonucleotides: Synthesis and function as mRNA in cell-free translation reactions <u>Tomoko Fujino</u> ¹⁾ , Takeru Suzuki ²⁾ , Koudai Okada ²⁾ , Kanako Kogashi ²⁾ , Ken-ichi Yasumoto ³⁾ , Kazuhiro Sogawa ³⁾ , Hiroyuki Isobe ¹⁾⁴⁾ 1) Department of Chemistry, The University of Tokyo, 2) Department of Chemistry, Tohoku University, 3) Department of Biomolecular Sciences, Tohoku University, 4) JST ERATO, Isobe Degenerate π -Integration Project
17:25-17:40		1O-11 Live-cell Imaging of an Endogenous Protein with a Small Molecule <u>Kathleen Beverly Pe</u> ¹⁾ , Kenji Yatsuzuka ¹⁾ , Motonari Uesugi ¹⁾²⁾ , Shin-ichi Sato ¹⁾ 1) Institute for Chemical Research, Kyoto University, 2) Institute for Integrated Cell-Material Sciences (WPI-iCeMS), Kyoto University
17:40-17:55		1O-12 Base modification of RNA to enhance the performance of RNA tools in cells <u>Yi Kuang</u> , Callum J.C. Parr, Shunsuke Wada, Kaoru R. Komatsu, Hirohide Saito Center for iPS Cell Research and Application, Kyoto University

Day 2: November 15 (Wed)

9:00-9:40	Invited Lecture Chair: Shigeki Sasaki Kyushu Univ.	IL-03 Chemically modified siRNAs for human therapeutics: From Principles to Patients <u>Muthiah Manoharan</u> Alnylam Pharmaceuticals
9:40-9:55	Break	
9:55-10:10	Oral Presentations Chair: Hidetaka Torigoe Tokyo Univ. of Science	20-01 Improved DNA scission activity of <i>Thermus thermophilus</i> Argonaute with artificial nucleic acids <u>Yuichiro Aiba</u> ¹⁾ , Kanae Yamaguchi ¹⁾ , Osami Shoji ¹⁾ , Yoshihito Watanabe ²⁾ 1) Department of Chemistry, Graduate School of Science, Nagoya University, 2) Research Center for Materials Science, Nagoya University
10:10-10:25		20-03 Cationic polymer improves cooperativity of allosteric nucleic acid enzyme <u>Orakan Hanpanich</u> , Naohiko Shimada, Atsushi Maruyama Tokyo Institute of Technology, Department of Bioscience and Biotechnology
10:25-10:40	Oral Presentations Chair: Atsushi Maruyama Tokyo Inst. of Tech.	20-04 Specificity modulation of Thioflavin T as a fluorescent probe for bioanalysis <u>Yuka Kataoka</u> , Hiroto Fujita, Seiji Tobita, Masayasu Kuwahara Graduate School of Science and Technology, Gunma University
10:40-10:55		20-05 Polymerase Synthesis of Ligand-bearing Unnatural Oligonucleotides toward Metal-mediated DNA Assembly <u>Yusuke Takezawa</u> , Teruki Kobayashi, Mitsuhiko Shionoya Department of Chemistry, Graduate School of Science, The University of Tokyo
10:55-11:05	Break	
11:05-11:45	Invited Lecture Chair: Junji Kawakami Konan Univ.	IL-04 Noncanonical DNA: structure, function and modulation <u>Kyeong Kyu Kim</u> ¹⁾²⁾ 1) Department of Molecular Cell Biology, Sungkyunkwan University School of Medicine, 2) Department of Health Sciences and Technology, Samsung Advanced Institute for Health Sciences and Technology, Sungkyunkwan University
11:45-12:00	Break	
12:00-12:15	Oral Presentations Chair: Takehiko Wada Tohoku Univ.	20-07 Novel RNA Architecture Formed by Eight RNA Strands Containing Fourteen G- A- and U-tetrads <u>Chao-Da Xiao</u> , Takumi Ishizuka, Yan Xu Division of Chemistry, Department of Medical Sciences, Faculty of Medicine, University of Miyazaki
12:15-12:30		20-08 Interaction between non-coding RNA and TLS/FUS protein, and structural change <u>Tsukasa Mashima</u> ¹⁾²⁾ , Takashi Nagata ¹⁾²⁾ , Nesreen Hamad ¹⁾²⁾ , Shunsuke Ozawa ¹⁾²⁾ , Yudai Yamaoki ¹⁾ , Keiko Kondo ¹⁾ , Hiroki Watanabe ³⁾⁴⁾ , Ryoma Yoneda ⁵⁾ , Takayuki Uchihashi ³⁾ , Riki Kurokawa ⁵⁾ , Masato Katahira ¹⁾²⁾ 1) Institute of Advanced Energy, Kyoto University, 2) Graduate School of Energy Science, Kyoto University, 3) Graduate School of Science, Nagoya University, 4) Research Institute of Biomolecule Metrology Co., Ltd., 5) Research Center for Genomic Medicine, Saitama Medical University
12:30-12:45		20-09 Optical Absorption Spectroscopy of Double-Stranded DNA-Encased Single-Walled Carbon Nanotubes Hybrids <u>Lijun Wang</u> , Kazuo Umemura Department of Physics, Tokyo University of Science

12:45-13:35	Lunch Break		
13:35-15:05	Poster Presentations (Even Numbers)		
15:05-15:45	Invited Lecture Chair: Naoki Sugimoto Konan Univ.	IL-05	Targeting DNA with ruthenium complexes <u>Christine Cardin</u> University of Reading, Department of Chemistry
15:45-16:00	Oral Presentations Chair: Hiroshi Abe Nagoya Univ.	20-10	Nucleobase azide–ethynylribose click chemistry: stabilizing oligonucleotide duplexes and stem-loop structures <u>Yoshiaki Kitamura</u> ¹⁾ , Ryo Asakura ¹⁾ , Koki Terazawa ¹⁾ , Aya Shibata ¹⁾ , Masato Ikeda ¹⁾²⁾ , Yukio Kitade ¹⁾³⁾ 1) Graduate School of Engineering, Gifu University, 2) United Graduate School of Drug Discovery and Medical Information Sciences, Gifu University, 3) Faculty of Engineering, Aichi Institute of Technology
16:00-16:15		20-11	Topological effect of non-canonical DNA structures on DNA replication <u>Shuntaro Takahashi</u> ¹⁾ , John A. Brazier ²⁾ , Naoki Sugimoto ¹⁾³⁾ 1) Frontier Institute for Biomolecular Engineering Research (FIBER), Konan University, 2) Department of Pharmacy, University of Reading, 3) Graduate School of Frontiers of Innovative Research in Science and Technology (FIRST), Konan University
16:15-16:30		20-12	Circularization of short DNA/RNA — A simple and interesting story of intermolecular and intramolecular Ran An ¹⁾²⁾ , Qi Li ¹⁾ , Yiqiao Fan ¹⁾ , Kai Cheng ¹⁾ , Yixiao Cui ¹⁾ , Tiange Hanxu ¹⁾ , Yaping Zhang ¹⁾ , Makoto Komiyama ¹⁾³⁾ , <u>Xingguo Liang</u> ¹⁾²⁾ 1) College of Food Science and Engineerig, Ocean University of China, 2) Laboratory for Marine Drugs and Bioproducts of Qingdao National Laboratory for Marine Science and Technology, 3) National Institute for Materials Science (NIMS)
16:30-16:40	Break		
16:40-17:20	Invited Lecture Chair: Takeshi Wada Tokyo Univ. of Science	IL-06	Pharmacologic Properties of Stereopure Oligonucleotides <u>Chandra Vargeese</u> WAVE Life Sciences

17:20-17:35	Oral Presentations Chair: Noriaki Minakawa Tokushima Univ.	20-13 Design and synthesis of bio-labile protecting groups for oligonucleotide prodrugs <u>Hisao Saneyoshi</u> , Takayuki Ohta, Kazuma Terasawa, Yuta Yamamoto, Akira Ono Department of Material and Life Chemistry, Faculty of Engineering, Kanagawa University
17:35-17:50		20-14 Creation of Safe and Secure Cancer Cell/Tissue Selective Oligonucleotide Therapeutics Strategy with Intracellular Condition Responsible Peptide Ribonucleic Acids (PRNAs) and MMP Activatable PEG/Arg-Conjugated Smart Delivery System <u>Takehiko Wada</u> ¹⁾ , Masato Inagaki ¹⁾ , Hiroka Sugai ¹⁾ , Ryohei Uematsu ¹⁾ , Mitsuo Asai ¹⁾ , Moeka Matsushima ¹⁾ , Ikuhiko Nakase ²⁾ , Asako Yamayoshi ³⁾ , Seiji Sakamoto ¹⁾ , Satoru Ishibashi ⁴⁾ , Yasuyuki Araki ¹⁾ , Takanori Yokota ⁴⁾ 1) Institute of Multidisciplinary Research for Advanced Materials (IMRAM), Tohoku University, 2) Nanoscience and Nanotechnology Research Center, Osaka Prefecture University, 3) NHakubi Center & Department of Science, Kyoto University, 4) Department of Neurology and Neurological Science, Tokyo Medical and Dental University
19:00-	Exchange Meeting	Asakusa View Hotel

Day 3: November 16 (Thu)

9:00-9:40	Invited Lecture Chair: Akira Ono Kanagawa Univ.	IL-07 High-affinity and high-stability DNA aptamer generation by genetic alphabet expansion and mini-hairpin DNA technologies <u>Ichiro Hirao</u> Institute of Bioengineering and Nanotechnology
9:40-9:55	Oral Presentations Chair: Akimitsu Okamoto Univ.of Tokyo	3O-01 Aggregate formation of RNA duplex with BODIPY units and its application to gene regulation <u>Kazuhito Tanabe</u> , Ryohsuke Kurihara, Wataru Asahi College of Science and Engineering, Aoyama Gakuin University
9:55-10:10		3O-02 Efficient initiation of <i>in vitro</i> mRNA transcription with Cap 0, Cap 1 and Cap 2 oligonucleotide primers <u>Alexandre Lebedev</u> , Dongwon Shin, Krist T. Azizian, Sabrina Shore, Jordana M. Henderson, Anton P. McCaffrey, Richard I. Hogrefe Trilink Biotechnologies
10:10-10:20	Break	
10:20-11:00	Invited Lecture Chair: Takeshi Wada Tokyo Univ. of Science	IL-08 Use of nucleic acid chemistry and DNA chip to synthesize and select antibacterial glycoclusters <u>François Morvan</u> Institut des Biomolécules Max Mousseron, Université de Montpellier
11:00-11:15	Oral Presentations Chair: Shinsuke Sando Univ. of Tokyo	3O-03 DNA Nanotechnology and Next Gen Sequencing-Based Approach to Inferring Spatial Properties of Nanoscale Structures <u>Ian Hoffeecker</u> , Giulio Bernardinelli, Björn Högberg Department of Medical Biochemistry and Biophysics, Karolinska Institutet
11:15-11:30		3O-04 Synthesis and Properties of Cyclic Oligonucleotides Containing Acyl Groups <u>Tanasak Kaewsomboon</u> , Shuhei Nishizawa, Ritsu Hashimoto, Yu Miyake, Takashi Kanamori, Hideya Yuasa, Akihiro Ohkubo Department of Life Science and Technology, School of Life Science and Technology, Tokyo Institute of Technology
11:30-11:40	Break	
11:40-12:20	Invited Lecture Chair: Masayuki Fujii Kindai Univ.	IL-09 Application of Staudinger Reaction for the Synthesis of DNA/RNA Analogues Modified at the Phosphorus <u>Dmitry Stetsenko</u> ¹⁾²⁾ , Boris Chelobanov ¹⁾²⁾ , Ekaterina Burakova ¹⁾ , Darya Prokhorova ¹⁾²⁾ , Polina Chalova ²⁾ , Alyona Zakhryamina ²⁾ , Anna Ilyina ²⁾ , Kristina Klabenkova ²⁾ , Svetlana Vasilyeva ¹⁾ , Alesya Fokina ¹⁾ 1) Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, 2) Novosibirsk State University
12:20-12:35	Oral Presentations Chair: Toshihiro Ihara Kumamoto Univ.	3O-05 PCR-free miRNA quantification by pyrene-modified probes <u>Akio Kobori</u> ¹⁾ , Yu Watari ¹⁾ , Kosuke Nakajima ¹⁾ , Asako Yamayoshi ²⁾ , Akira Murakami ³⁾ 1) Kyoto Institute of Technology, 2) The Hakubi Center for Advanced Research, 3) Kyoto Pharmaceutical University
12:35-12:50		3O-06 Lead(II)-Specific Peroxidase Activity of Split Quadruplex DNA-Hemin Complex to Detect Target Gene Ryo Akiba, <u>Hidetaka Torigoe</u> Department of Applied Chemistry, Faculty of Science, Tokyo University of Science
12:50-13:40	Lunch Break	

13:40-14:20	Invited Lecture Chair: Takashi Morii Kyoto Univ.	IL-10 Development of novel oligonucleotides as potential molecules for precision therapy of neuromuscular diseases <u>Rakesh Naduvile Veedu</u> ¹⁾²⁾ 1) Centre for Comparative Genomics, Murdoch University, 2) Institute for Neurological and Translational Science
14:20-14:35	Oral Presentations Chair: Kohji Seio Tokyo Inst. of Tech.	30-07 The effects of CpG methylation on the structure and the binding property against proteins of G-quadruplex forming DNAs <u>Kazunori Ikebukuro</u> ¹⁾ , Shiori Saito ¹⁾ , Wataru Yoshida ²⁾ , Kaori Tsukakoshi ¹⁾ 1) Department of Biotechnology and Life Science, Graduate School of Engineering, Tokyo University of Agriculture and Technology, 2) School of Bioscience and Biotechnology, Tokyo University of Technology
14:35-14:50		30-08 Recognition of c-di-GMP by a riboswitch represses translation through masking the SD element distant from the aptamer domain <u>Yoshiya Ikawa</u> ¹⁾ , Saki Inuzuka ¹⁾ , Hitoshi Kakizawa ¹⁾ , Kei-ichiro Nishimura ²⁾ , Hiroyuki Furuta ²⁾ , Shigeyoshi Matsumura ¹⁾ 1) Graduate School of Science & Engineering, University of Toyama, 2) Graduate School of Engineering, Kyushu University
14:50-15:05		30-09 Design of naphthalene diimide carrying preference for parallel tetraplex nucleic acid <u>Shigeori Takenaka</u> ¹⁾²⁾ , Yuka Sato ¹⁾ , Hiroki Minematsu ¹⁾ , Shinobu Sato ¹⁾²⁾ 1) Department of Applied Chemistry, Kyushu Institute of Technology, 2) Research Center for Biomicrosensing Technology, Kyushu Institute of Technology
15:05-15:20		30-10 Crystal structure of the human ribosomal decoding A site in complex with G418 possessing readthrough activity <u>Hiroki Kanazawa</u> ¹⁾ , Nao Tsurumi ²⁾ , Jiro Kondo ¹⁾²⁾ 1) Graduate School of Science and Technology, Sophia University, 2) Department of Materials and Life Sciences, Sophia University
15:20-15:35	Oral Presentations Chair: Fumi Nagatsugi Tohoku Univ.	30-11 Synthesis of Oligodeoxyribonucleotides Containing 2- <i>N</i> -Heteroarylguanine Residues and Their Effect on Higher-order Structure Stability <u>Takeshi Inde</u> , Yoshiaki Masaki, Astuya Maruyama, Yu Ito, Naoaki Makio, Yuya Miyatake, Takahito Tomori, Mitsuo Sekine, Kohji Seio Department of Life Science and Technology, Tokyo Institute of Technology
15:35-15:50		30-12 Construction of a bienzyme immobilizing microelectrode by cross-linked DNA scaffolds and its application to analysis of cellular metabolism <u>Yu Hirano</u> , Masaki Ikegami, Keiko Kowata, Yasuo Komatsu Bioproduction Research Institute, National Institute of Advanced Industrial Science and Technology (AIST)
15:50-16:00	Closing Remarks	